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ABSTRACT

The gap between the academic achievement of minority group and white majority group students is at the forefront of educators' and policymakers' agenda in North Carolina and nationwide. The North Carolina Education Cabinet has set the target of eliminating the gap by the year 2010. This report reviews the evidence for each of several steps intended to help reduce the gap. These include: extending high quality, academically focused early childhood education to all children at risk of school failure; ensuring that African-American children are taught by able, well-prepared, experienced teachers; reducing class size in the early grades; adopting sound and equitable grouping practices in elementary schools; ensuring that African American students are equitably represented across curriculum tracks in high schools; bridging home and school cultures by adapting teaching and discipline practices to suit students' backgrounds; demanding success by holding both schools and students accountable; supporting students with individual tutoring, more comprehensive reforms, summer programs, and follow-up assistance; and desegregating schools and programs within schools. Appended are the 16 comprehensive school reform models with the soundest basis of research and strongest evidence of effectiveness. (Contains 100 bibliographic references.) (SM)

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THE NORTH CAROLINA EDUCATION RESEARCH COUNCIL

ELIMINATING THE BLACK-WHITE ACHIEVEMENT GAP:

A Summary of Research

by Charles L. Thompson
and Sam D. O'Quinn, III

June, 2001

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ELIMINATING THE BLACK-WHITE ACHIEVEMENT GAP:

A Summary of Research

THE NORTH CAROLINA EDUCATION RESEARCH COUNCIL

Executive Summary - Closing the Gap: Sensible Steps, No Magic

The gap between the academic achievement of students from minority groups and that of the white majority is once more at the forefront of educators' and policymakers' agenda, in North Carolina as elsewhere around the country. As part of its *First in America* initiative, the North Carolina Education Cabinet set the target of eliminating the minority achievement gap by the year 2010:

TARGET	INDICATOR				
• NC will eliminate the minority achievement gap.	Percentage point gap in performance between white and minority students on NAEP and NC EOG and EOC examinations		BLACK	HISPANIC	AMERICAN INDIAN
		NAEP	28	24	21
		EOG and EOC	27	18	14

Whether measured by the National Assessment of Educational Progress or the North Carolina End-of-Grade and End-of-Course examinations, the gaps between the performance of white and minority students are substantial. As we shall see, the gaps have narrowed to some degree in recent years, but if they are to be eliminated altogether by 2010, the rate of improvement will have to increase sharply.

The size of the gap is similar from group to group, but the specific causes of and cures for the gaps may differ significantly from one minority to another. The present report focuses primarily on the gap between African-American students and their European-American counterparts, and on the ways schools may either recreate and preserve the gap or eliminate it. Future reports will deal with the gaps experienced by other minority groups.

Though the broad historical, legal, socioeconomic, and educational causes of the black-white gap are certainly clear, the specific mechanisms that recreate and maintain it from one generation to the next are incompletely understood. Even so, enough is known to narrow the gap sharply and possibly to eliminate it altogether. Research does not point to any dramatic "breakthrough" interventions, but to a series of apparently straightforward changes that schools could make in order to close the gap.

While these changes seem straightforward and can be described in simple terms, important complexities and potential pitfalls are associated with most of them, and none is easy to carry out. Some are costly. Others may not be costly in dollar terms, but are politically controversial, and would thus require policy makers to expend valuable political capital. Still others involve changes in knowledge, skills, and ways of thinking that are hard to bring about, especially on the scale of a whole state's education system. Effective steps that are both cheap and easy have either been made already or will be discovered only through further research.

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The steps that research points to are these:

- **Extend high quality, academically-focused early childhood education to all children at risk of school failure.**
  By the time students enter kindergarten, the gap is already quite wide — about half its ultimate size. Yet high quality early childhood programs that focus on academic preparation for school can reduce the gap sharply, and their effects last well into the schooling process.

- **Ensure that African-American children are taught by able, well-prepared, experienced teachers.**
  The quality of teachers assigned to students may be the most powerful influence on their achievement. Yet minority children are regularly assigned less qualified, less experienced teachers than are white children. Some studies suggest that equalizing teacher assignment patterns could eliminate nearly all of the gap not attributable to poverty and its correlates.

- **Reduce class size in the early grades.**
  For years, research on class size has been mixed. But recently, the evidence has become clear that smaller classes — classes with fewer than 18 students — can produce large and lasting gains for all students. Students from impoverished minority families gain even more than white and other middle class students.

- **Adopt sound and equitable grouping practices in elementary schools.**
  Grouping students into classes by ability gives substantial help only to students in accelerated programs. African-American students are seldom assigned to such programs, either nationally or within North Carolina. So ability grouping as commonly practiced widens rather than reducing achievement gaps. Sounder and more equitable grouping practices can do the reverse — narrow the gaps.

- **Assure that African-American students are equitably represented across curriculum tracks in high schools.**
  Students in top tracks get exposure to material not available to students in lower tracks. Unless African-American students are assigned to top tracks in proportion to their numbers in a school, the difference in opportunities to learn advanced material widens the gaps. Requiring all students to take challenging curricula can reduce achievement gaps without increasing dropout rates.

- **Bridge home and school cultures by adapting teaching and discipline practices to suit students' background.**
  Much research indicates that no unique teaching techniques are necessary for African-American students to learn effectively, but a strong case can be made for explicit, direct instruction and discipline practices to set the stage for practices such as extensive self-directed reading, learning to write via editorial conferences with the teachers and other students, or complex problem-solving in mathematics.

- **Find reasons to expect each student to succeed.**
  Searching for students' talents and strengths — for reasons to regard every student as "a valuable person with good prospects" can enable students to tap more of their potential and avoid falling victim to "stereotype threat." The "wise" school is characterized by warm valuing relationships, challenging curricula, racial integration, and a recognition that black culture is not outside the mainstream, but is "one of its major tributaries."

- **Demand success by holding both schools and students accountable.**
  Accountability may be viewed as the "tough love" side of high expectations. The ABCs accountability system seems to have helped narrow the gap over the few years it has been in place. In Chicago, a stringent "no social promotion" policy with strong supports for students at risk of retention has produced very large gains for students in the sixth and eighth grades. Yet both school accountability and student accountability programs pose risks that must be carefully managed if gains are to outweigh disadvantages.

- **Support students with individual tutoring, more comprehensive reforms, summer programs, and follow-up assistance.**
  Individual tutoring by certified teachers, peers, or carefully selected and trained volunteers or aides can help many students make major strides. There is some evidence that certain comprehensive models that include well-specified curriculum, coherent instruction, special help for at-risk students, and family support programs can help still more. Tightly organized summer programs closely aligned to the regular curriculum and taught by qualified teachers can help many students avoid retention. Students retained despite extra assistance clearly need careful diagnosis and intensive support during the year they are retained in grade.

- **Desegregate schools and programs within schools.**
  Racial segregation is not a trivial matter of "who sits next to whom." Both black and white children in thoroughly desegregated schools get better teachers, more resources, and achieve at higher rates than do children in predominantly black schools. Segregation hurts middle class black children most, but hurts all children. Yet North Carolina's schools are resegregating at an intensifying pace. Once thought a thing of the past, segregation looks more and more like the wave of the future — unless districts make active efforts to counter the trend.

Closing the Gap: Sensible Steps, No Magic

The gap between the academic achievement of students from minority groups and that of the white majority is once more at the forefront of educators' and policymakers' agenda, in North Carolina as elsewhere around the country. As part of its *First in America* initiative, the North Carolina Education Cabinet set the target of eliminating the minority achievement gap by the year 2010. Whether measured by the National Assessment of Educational Progress or the North Carolina End-of-Grade and End-of-Course examinations, the gaps between the performance of white and minority students are substantial. As we shall see, the gaps have narrowed to some degree in recent years, but if they are to be eliminated altogether by 2010, the rate of improvement will have to increase sharply.

The size of the gap is similar from group to group, but the specific causes of and cures for the gaps may differ significantly from one minority to another. The present report focuses primarily on the gap between African-American students and their European-American counterparts, and on the ways schools may either recreate and preserve the gap or eliminate it. Future reports will deal with the gaps experienced by other minority groups. (The NC Department of Public Instruction and many other state and federal agencies use the terms "black" and "white" instead of "African-American" and "European-American." In this report we use the two sets of terms interchangeably.)

Though the broad historical, legal, socioeconomic, and educational causes of the black-white gap are certainly clear, the specific mechanisms that recreate and maintain it from one generation to the next are incompletely understood. Even so, enough is known to narrow the gap sharply and possibly to eliminate it altogether. Research does not point to any dramatic "breakthrough" interventions, but to a series of apparently straightforward changes that schools could make in order to close the gap. The steps that research points to are these:

- Extend high quality, academically-focused early childhood education to all children at risk of school failure.
- Ensure that African-American children are taught by able, well-prepared, experienced teachers.
- Reduce class size in the early grades.
- Adopt sound and equitable grouping practices in elementary schools.
- Assure that African-American students are equitably represented across curriculum tracks in high schools.
- Bridge home and school cultures by adapting teaching and discipline practices to suit students' background.
- Find reasons to expect each student to succeed.
- Demand success by holding both schools and students accountable.
- Support students with individual tutoring, more comprehensive reforms, summer programs, and follow-up assistance.
- Desegregate schools and programs within schools.

While these steps seem straightforward and can be described in simple terms, important complexities and potential pitfalls are associated with most of them, and none is easy to carry out. Some are costly. Others may not be costly in dollar terms, but are politically controversial, and would thus require policy makers to expend valuable political capital. Still others involve changes in knowledge, skills, and ways of thinking that are hard to bring about, especially on the scale of a whole state's education system. Effective steps that are both cheap and easy have either been taken already or will be discovered only through further research.

In the sections that follow, we review some of the evidence for each step, explore some of the complexities and caveats, and point out some of the challenges of implementation.

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Extend high quality, academically-focused early childhood education to all children at risk of school failure.

By the time of school entry, the black-white test score gap has already grown to about half of its ultimate size.[1] Many African-American children start school so far behind that the initial encounter is profoundly discouraging, and they simply never catch up sufficiently to cope with school. There is strong evidence that good early childhood programs can produce substantial immediate gains for disadvantaged children, but until recently considerable dispute persisted over whether the gains last or wash out over the longer term.

Barnett reviewed thirty-six studies of early childhood care and education programs (ECCE) and concluded that while ECCE programs produce only short-term gains in IQ scores, they can have long-term benefits in school achievement, grade retention, special education placement, and socialization.[2] Barnett noted that gains are significant and lasting only in ECCE programs of high quality — those with low child-staff ratios, well-educated staff, and careful supervision. On the basis of a major longitudinal study of children who have received high quality care in a range of "typical" child care centers nationwide, a team of researchers led by Peisner-Feinberg and Burchinal of the Frank Porter Graham Child Development Center confirmed the lasting effects of quality child care, finding it especially important for children of less well-educated mothers.[3]

In addition to the quality of ECCE programs, Barnett found that their focus or emphasis is also crucial. Programs that made a deliberate effort to familiarize children with letters, sound-letter correspondence, numbers, and other content important to success in the early grades — what Barnett termed a "cognitive focus" — gave at-risk children an advantage when they started school.

Yet whether and how early childhood programs should focus on preparation for academic success is controversial among early childhood educators. Some worry that early pressures for academic preparation will leave many children feeling anxious, hurried, and hostile to school.[4] These concerns are heightened by programs that feature tightly scripted teaching, such as those praised by the Bush administration.[5]

If prior education battles such as "the reading wars"[6] have anything to tell us about the present controversy, it is that there is probably some truth on both sides of this issue. Early childhood educators will need to find approaches that give disadvantaged children opportunities to get ready for school, but without subjecting them to premature pressure or numbing rigidity that engenders anxiety and dislike for learning. As a recent study of Georgia's Pre-K program shows, "child-centered" teachers — teachers who use and build on children's natural interests rather than using more rigid, "drill and skill" approaches — produce better learners in kindergarten and the early grades.[7]

North Carolina already has an award-winning early childhood program in Smart Start, but many child care providers do not give sufficient emphasis to academic preparation, and as many as 10,000 needy four-year-olds are receiving no services at all.[8] A recent study by the Frank Porter Graham Child Development Center showed that children from poor and impoverished families continue to lag far behind middle class white children in school readiness.[9] Governor Easley's proposed More at Four program is designed to address these problems. Results from Pre-K programs in other states are encouraging, but other states' experiences have also revealed some significant pitfalls in the implementation process. These will be addressed in a separate *First in America Special Report* due out this summer.

Ensure that African-American children are taught by able, well-prepared, experienced teachers.

As a group empaneled by then-Governor Hunt and Superintendent Mike Ward recently observed, readiness is a puzzle with two pieces.[10] If it is crucial to get more at-risk African-American children ready for school, it is also crucial to get more schools ready for these children. Just what it means to get schools ready for disadvantaged children is a complicated matter, but at the very least, it means assigning them teachers who are just as able and well-prepared as those assigned to teach their well-to-do white counterparts. (It also means making sure that classes are small enough for teachers to give them individual attention, with a minimum of distractions from discipline problems. That dimension of the ready school is addressed in the next section.)

There is considerable evidence that the quality of the teachers assigned to a student is among the most important

determinants of how much the student will learn. There is also evidence that African-American students are significantly less likely to get good teachers than are their white counterparts.

Some of the most compelling evidence of the importance of teacher quality comes from the work of William Sanders and his associates. Sanders developed the Tennessee Value-Added Assessment System (TVAAS). By comparing a student's test scores at the end of a given school year with her scores at the end of the previous year, TVAAS isolates how much the student has learned that year in certain core academic subjects from what she already knew on the basis of prior schooling and other experience. According to Sanders, this provides a measure of the academic "value" that a year's schooling has added to the student's repertoire that is independent of the student's family background, including his parents' level of education and income as well as race.[11]

Analysis of TVAAS data has shown differences in the effectiveness of teachers to be the single most important factor accounting for differences in students' academic growth from year to year, far more important than the size of classes, the homogeneity or heterogeneity of the achievement levels of students in a class, or students' prior level of achievement.[12] A string of particularly effective or ineffective teachers can have either a huge positive effect or a disastrously negative effect on students' learning. Students who get three very effective teachers in a row in grades three through five score fifty percentile points above students who are unlucky enough to get three ineffective teachers in a row.[13] The effects of even a single ineffective teacher are enduring enough to be measurable at least four years later.[14] Good teachers in subsequent grades boost achievement, but not enough to compensate for the effects of an earlier ineffective teacher.[15]

In light of these findings about the power of teacher effectiveness, it is disturbing, though perhaps not surprising, to learn that white children generally get better teachers than African-American children do. In one Tennessee metropolitan district, about half as many black students got especially effective teachers as would have been expected, based on the percentage of the student population they represented. And about 10% more black students were assigned to especially ineffective teachers than would have been expected.[16]

To assure that African-American students get teachers of the same quality as those assigned to white students, LEA officials need to know what characteristics distinguish effective from less effective teachers. The work of Sanders and his colleagues has demonstrated graphically just how important teacher quality is, but has only begun to address the question of just what makes one teacher more effective than another.

For that, one must turn to other research, and while the literature is relatively clear about some characteristics of good teachers, it leaves room for dispute on several points. What ultimately matters, of course, is the quality of teaching practice – what teachers actually do in the classroom. But research involving classroom observation is expensive, and schooling is a massive enterprise. So researchers have typically relied on indirect indications of teaching quality such as assessments of teachers' intellectual ability and knowledge. [Or even more indirectly, on information about teachers' education and preparation to teach, continued professional development, and teaching experience.] These are more indirect than actual classroom observation, but less expensive to obtain. The premise is generally that (1) more intellectually able teachers are better able to learn what they need to know and to use it flexibly, (2) that some combination of teachers' knowledge of their subject matter, of how students learn, and of how to teach make for stronger practice, and (3) that through experience teachers learn more about teaching and learning as well as how to put what they know into practice on a reliable basis.

Varying degrees of support may be found for the importance of teachers' intellectual ability, level of education, subject matter knowledge, training in how students learn and how to teach, certification or licensure status, and experience:

- While support for a link between teachers' general intelligence (IQ) and their teaching effectiveness is weak, the evidence is stronger that teachers' verbal ability does matter in the classroom, and this accords with the commonsense notion that the ability to give clear presentations and to sort out students' confusions is central to teaching.[17]
- Whether a teacher has a master's degree seems only weakly related to effectiveness, but the evidence is stronger that advanced education in the subject that the teacher actually teaches does increase teachers' effectiveness.[18] The key issue may be whether a teacher has a command of the subject matter that is adequate for the level of the students to be taught rather than the absolute level of knowledge that a teacher has attained.[19]
- There is also strong evidence that education coursework — coursework on learning and teaching — does help.[20] Some research suggests that it is the combination of subject matter knowledge and knowledge of learning and teaching that is really important.[21]
- Formal teacher preparation and licensure requirements seem to help assure that teachers have both an understanding of their subject matter and a command of teaching techniques.

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- Beyond a point, more experience is not necessarily better, but inexperienced teachers are generally less effective than teachers with at least five years of experience.[22]
- Not surprisingly, the evidence seems strongest for teachers with a combination of strong subject matter knowledge, knowledge of teaching and learning, and several years of experience.[23]
- Finally, a teacher who is able, well-prepared, and experienced in teaching in a particular subject or at a particular grade level is not necessarily effective in teaching other subjects or other grade levels.[24]

In a carefully researched series published in the Raleigh *News and Observer*, Simmons and Ebbs reported that in North Carolina, predominantly African-American schools have large percentages of inexperienced and uncertified teachers, sometimes up to twenty percent.[25] Mickelson reports a similar finding in the Charlotte-Mecklenburg Schools.[26]

In sum, then, the quality of teachers students get exerts a powerful influence on how they learn, and African-American students are often assigned teachers with weaker qualifications than are assigned to teach their white counterparts.

Reduce class size in the early grades.

The second major characteristic of schools that are ready to teach African-American students to high standards is small classes, especially in kindergarten through third grade. Research confirms that sharply reducing the size of classes in the early grades can produce large and lasting gains in student learning:

- The evidence that smaller classes promote increased learning is stronger for grades K-3. The evidence favoring smaller classes is weaker at other grade levels.[27]
- Slight reductions — say, from 27 to 25 — do not seem to help much. Only when classes drop below a certain threshold (no more than 20 and probably as few as 17) do large benefits appear and last into subsequent grades.[28]
- Smaller classes help students from all backgrounds, but they give the greater boost to minority and low-income students.[29] This is precisely the sort of intervention the North Carolina State Board of Education and Department of Public Instruction are seeking — one that improves achievement by all students, but helps minority and low-income students the most.
- In a number of studies, including one in Burke County, North Carolina, teachers in smaller classes had fewer discipline problems than in larger classes.[30]
- Teaching in small classes also affords more individual attention through one-on-one tutoring and brief on-the-fly help from teachers.[31]
- Putting teacher aides into classes of normal size is not a good substitute for class size reduction. Student achievement is not significantly improved in regular sized classes with a full-time teacher aide.[32]
- Research on tutoring suggests that if the aides are carefully selected for their verbal skills, trained, and assigned to tutor students one on one, the results can be better.[33] But simply introducing teacher aides into normal-sized classes does not seem to help.
- For students to get substantial long-term gains from smaller classes, they need to be in the smaller classes for at least two years.[34] The longer students are in small classes, the more they benefit.
- Not only do K-3 students in small classes learn more than similar students in larger classes, but they also continue to learn more even after they move into larger classes at grades four and above.[35]
  - Preliminary results from one major study show that students who had been in small K-3 classes for at least two years were less likely to drop out of school and were more likely to graduate from high school with honors.[36]
  - The study also showed that the gap between scores of black and white students taking college entrance exams was significantly smaller for black students who had been in smaller classes in the early grades than for black students in regular classes or classes with a teacher aide.[37]

Despite the clear and important advantages offered by small classes, there are also important difficulties to be considered. First, qualified teachers are in short supply. Four years ago when California initiated a statewide class size reduction program, the state found itself severely short of licensed teachers, especially in schools serving high percentages of disadvantaged students. Since reducing all of its kindergarten through third grade classes to 20 students to one teacher, California has seen a dramatic rise in teachers who are teaching without a license.[48] As we have already seen, research shows that teacher quality may be even more important to student achievement than is class size.

Second, smaller classes require additional classroom space and additional equipment, which may translate into new schools or significant additions to existing facilities. As the *First in America 2000 Progress Report* has shown, inadequate facilities and materials are already a major problem for North Carolina's schools. And third, there are trade-offs. Class size reduction may mean cuts in other programs that schools now offer or might offer.

Taken together, these obstacles or downsides strongly suggest phasing in any program of class size reduction, focusing first on schools with large numbers of poor and minority children.

Adopt sound and equitable grouping practices in elementary schools.

The research literature on the effects of grouping elementary school students for instruction on the basis of their ability is complex and can be confusing. One way to make sense of the literature is to view the net effect of ability grouping as a trade-off between two sets of effects: (1) the potentially positive effect of narrowing the range of skills that a teacher must accommodate in instruction, and (2) the potentially negative effects of undermining the confidence of low-group students, expecting less of them, and limiting their opportunities to learn. On average, grouping helps students only if it is done in a way that maximizes the positive effects and minimizes the negative effects.

According to Slavin's review of research on grouping in the elementary grades, grouping students for only one or two subjects — generally, for reading and mathematics — can be helpful if students are grouped strictly on the basis of their skills in each specific subject to be taught, and if the teacher actually does pitch instruction to the right skill level and pace for each group.[49] Students who are skilled in reading are not necessarily skilled in mathematics, and vice-versa. So using reading scores to assign students to groups or classes that are kept intact for all subjects does not reduce the range of skills in most subjects enough to make it possible to target instruction. The same would be true of using math scores to form groups for all subjects. And even if a group of students do share a narrower range of skills, the teacher must exploit the advantage by keying the instructional level and pace to this skill range. If the teacher simply continues to teach as though to the average student, any potential benefit is lost. Students must also be reassessed often and reassigned to groups as appropriate. This not only helps assure a match between the level of instruction and each student's level of skill, but also helps communicate that assignment to groups is a reflection of the skill level that a student has achieved at a given time in a given subject, not a reflection of a fixed level of general intelligence.

By grouping students for only one or two subjects, grouping them differently for different subjects, and regrouping them on the basis of frequent reassessment, teachers can reduce the range of skills in each group without communicating that little is expected, demanded, or offered to students in low groups. In contrast, Slavin argues, keeping students in the same groups or classes for all subjects tends to stigmatize students in low groups. It seems to tell them that not much is expected or will be demanded of them. And it deprives them of the opportunity to learn the more advanced material available to students in higher groups.

Kulik and Kulik's review of the same research literature reached similar conclusions on many points.[50] Unlike Slavin, however, the Kuliks did find a slight advantage for "comprehensive" grouping —assignment to fixed groups across all subjects — over ungrouped instruction. They also found a smaller advantage for the approach of grouping in only one or two subjects, regrouping for each subject, and reassessing frequently and reassigning as necessary. The main difference between the two reviews, however, is in the Kuliks' insistence that the "most robust" finding about grouping is that special accelerated programs for gifted students result in significantly more learning for these students. The difference in emphasis may result in part from a difference of orientation. In general, Slavin seems most interested in questions of equity (Is grouping good for and fair to all students?), while the Kuliks seem most concerned about meritocracy (Is grouping good for gifted students?).

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What, then, are the implications for efforts to reduce the achievement gap? On balance, it would seem wise to avoid "comprehensive" grouping. Slavin's reading of the literature and his arguments against the practice suggest that there are real dangers for low-group students, and there is considerable evidence that minority students are assigned disproportionately to low groups. The Kuliks' finding of a slight advantage for students in comprehensive grouping does not seem sufficient to outweigh the risk that Slavin identifies.

On the other hand, the Kuliks' strong argument that special accelerated programs for gifted students do increase learning for this set of students also seems well-founded. If the Kuliks are correct, then it would be especially important to ensure that black students are proportionally represented in such programs. If they are not, then programs for the gifted will widen rather than narrowing the gap in achievement between white and black students. In a study recently commissioned by the NC Department of Public Instruction, Darity, Castellino, and Tyson found that across North Carolina, African-American students are sharply underrepresented in programs for academically and intellectually gifted (AIG) students. During the 1999-2000 school year, black students represented about 30% of the overall student population, but only about 10% of the enrollment in AIG programs.[9]

Especially in light of the dangers associated with grouping students of similar ability, a strong case can be made for "cooperative learning groups," in which students of different abilities are deliberately assigned to work together in small groups. Slavin argues that if done in the right way, cooperative learning can be productive for high-performing as well lower-performing students.[10] In cooperative learning, students are assigned to small, heterogeneous groups and interact intensively to complete a product or learning task. According to Slavin, cooperative learning groups are effective only when the students in each group are rewarded for learning by every individual member of the group, not when the whole group is rewarded for a single product created by the group. Rewarding group members for learning by every member of a group creates an incentive for higher achievers to help lower achievers master the material. Under these circumstances, higher achievers benefit from the fact that teaching someone else is among the best ways to learn something fully, and lower achievers benefit from their help. Assigning groups responsibility for jointly completing a single product – which allows some students to get a "free ride" while a few do the work and reap the benefits for their own learning — does not result in better learning than does traditional ungrouped instruction.

Assure that African-American students are equitably represented across curriculum tracks in high school.

Turning to the research on grouping at the secondary level, Slavin puzzled over the apparent discrepancy between the literature that finds no real advantage for grouped over ungrouped instruction and the literature showing that students in top tracks clearly learn more than do students in lower tracks.[11] Slavin did concede that – as Kulik and Kulik found – programs that are designed explicitly for gifted students and that accelerate content coverage do show a clear advantage over ungrouped instruction. This is consistent with the argument that tracked instruction provides an advantage to high achievers and does so largely because it gives them exposure to material that is unavailable to students in lower tracks. That is, tracking involves giving students different courses, with upper track students gaining an opportunity to learn concepts and skills that are simply not addressed in lower track courses.

There are, as Slavin pointed out, reasons to doubt that the differences in the performance of higher and lower track students result primarily or exclusively from differences in curriculum and instruction between high and low tracks. For one thing, students in higher tracks are generally better motivated and more highly skilled than students in lower tracks, and learning differences between tracks may simply reflect the differences between the types of students in the two tracks ("selection effects") rather than the effects of differences in instruction.

When all is said and done, however, it is difficult to argue with the "opportunity to learn" argument put forward by Sorenson and Hallinan.[12] That is, students simply cannot learn what they are never exposed to, no matter how hard they work or what prior knowledge and skill they bring to the task. Students' opportunities to learn place a ceiling on what they can learn. And upper tracks have substantially higher ceilings than lower tracks do. So students in upper tracks gain important learning advantages over students in lower tracks. To the extent that higher proportions of African-American students are placed in lower tracks, this unequal assignment is bound to widen the gap between what black and white students learn in school.

The previously-cited study by Darity, Castellino, and Tyson reveals a pattern of underrepresentation in high tracks and overrepresentation in low tracks all across North Carolina. For example, although African-Americans represent about 30% of North Carolina's student population, only about 13% of the students enrolled in the four AP courses taught most frequently in North Carolina schools are black, and only 7% of students who took at least one Advanced Placement examination were black.[15]

Mickelson has shown that in the Charlotte-Mecklenburg Schools, black and white students *of similar achievement* at the end of elementary school show up in very different proportions in upper high school tracks.[16] About 52% of white students who scored near the top of their sixth grade class ended up in upper high school tracks, while only about 20% of black students with similar scores later found their way into upper tracks. To some degree, the differences in assignment may reflect individual students' preferences. As discussed in the section on expectations below, negative racial stereotypes may heighten the fear of failure and make some black students shy away from challenging courses. But counselors and teachers generally influence and sometimes determine students' choice of courses, and thus could help change these patterns. At present, inequities in tracking often widen the gap between black and white students, and do so not simply through the operation of a meritocratic process in which the ablest move ahead at a faster pace than the less able, but through an assignment process that favors whites over blacks of equal ability.

Opponents of tracking argue vociferously that it should be eliminated altogether.[17] Yet moves to eliminate or even to reduce tracking often meet with strong resistance from the parents of high-achieving, college-bound students. They say that to eliminate tracking would deprive their children of a fair opportunity to learn to their full potential. Whatever the intrinsic merits or demerits of tracking, the practice seems unlikely to disappear from North Carolina high schools. It may not be necessary to eliminate tracking in order to close the black-white achievement gap. What does seem necessary is for districts and schools to monitor the proportions of African-American and European-American students in the tracks they offer, and to take steps to assure that black and white students are distributed across tracks in roughly the same proportions as they are found in the schools' total population. At the very least, an African-American student should have the same chance to find her way into higher tracks as a white child who scores similarly on standardized tests.

Some worry that equalizing the proportions of minority students in high level courses could lead to widespread failure and discouragement. But the research literature on course taking suggests otherwise. There is evidence that requiring students to take more challenging, college-oriented courses does raise their test scores, and does so without increasing dropout rates or harming minority or low-income students. In fact, minority and low-income students may benefit more than others from stronger course requirements.

University of Wisconsin researcher Andrew Porter examined the results of state policies that increased the number of credits of mathematics and science required to graduate from high school.[18] Increased graduation requirements did prompt students to take more mathematics and science, and did so without reducing their graduation rate. Nor did the influx of additional students cause teachers to water down the curriculum in order to accommodate them. In fact, teachers made little or no change in what they taught or how they taught it.

Porter also examined the achievement of high school students from two urban districts in two states that were leaders in upgrading high school mathematics requirements. He compared test scores of students in low-track mathematics and college prep mathematics with students in so-called "transition mathematics courses," designed to help initially low-achieving students succeed in college prep courses. Regardless of their prior grades and scores, students in college prep mathematics learned the most, "transition mathematics" students the next most, and low-track mathematics, the least. In other words, the higher level of mathematics curriculum students were exposed to, the more they learned, regardless of prior performance.

Prior performance in mathematics presumably reflects some combination of talent for mathematics and motivation to learn it. If students who take higher level courses learn more regardless of their prior grades and scores, then taking higher level courses apparently makes its own independent contribution to learning, quite apart from talent and motivation. Overall, Porter's evidence supports the notion that requiring mathematics for graduation prompts students to take more mathematics courses and that higher level mathematics courses lead to higher levels of learning, all without the negative side effects that some might fear. Porter even argues that all low-track mathematics courses should be eliminated.

Clifford Adelman of the US Department of Education has shown that the effects of taking higher levels of mathematics coursework extend well beyond the first semester in college.[19]

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Adelman's work demonstrates that students who take more mathematics in high school are much more likely to *complete* a bachelor's degree than students who take less. On Adelman's five step "ladder" of mathematics coursework — with Pre-Algebra and Algebra at the bottom and Pre-Calculus and Calculus at the top — each step up the ladder increases a student's chances of graduating from college by more than two and one half times.

Not only that, but the gains from taking a more demanding mathematics curriculum are even greater for African-American and Latino students than for white students. For years, the conventional wisdom was that the low socioeconomic status (SES) of many black and Latino students' families was just too great a handicap for many to overcome. It is true that growing up in a better-off, better-educated family is an advantage educationally. But not as much of an advantage as taking a higher-level high school curriculum. For each step up a five-rung ladder of socioeconomic status, a student's chances of graduating from college improves only a little more than one and one half times (1.68), compared to an improvement of two and one half times for every step up the ladder of the mathematics curriculum. As Adelman put it, "math solidly trounced SES!"

The UNC Board of Governors recently approved a policy increasing the minimum course requirements in mathematics and foreign language. To the extent that African-American students are included in college-bound tracks, the new policy should improve their test scores and their chances of success in college. But if they continue to be underrepresented in the higher tracks, the course requirement change could actually widen the gap between black and white students. The ultimate impact depends on the action of local schools and districts.

Bridge home and school cultures by adapting teaching and discipline practices to suit students' background.

Whether African-American children require or at least learn better from teaching practices that differ from those that work well with most white children remains in dispute. Ronald Ferguson of Harvard's Kennedy School of Government concluded from a wide-ranging review of quantitative research that on the whole, there is little reason to believe that black children do require special instructional approaches.[50] Yet Georgia State University professor Lisa Delpit, winner of a prestigious MacArthur Award for work based on her own teaching experience as well as on related ethnographic research, makes a persuasive case for a different view.[51]

Delpit portrays the encounter between many African-American children and school in terms of a clash of cultures, a clash that can be resolved fruitfully neither by ignoring the differences, nor by compelling black children to reject or give up the culture of their home and community, but by helping them become "bilingual" or "bicultural," so to speak.

That is, according to Delpit, the culture of most schools in the US is a white middle class culture, one that values and demands certain ways of communicating and acting — "ways of talking, ways of writing, ways of dressing, and ways of interacting."[52] To succeed in school, says Delpit, children who do not grow up in a middle class culture need to learn the culture of school, more or less as one would learn a second language. No one would argue that learning a second language implies that one's first language is somehow wrong or worthless. The second language is simply a code for communicating and functioning in a context that is different from the code used at home. For many African-American and other minority children, so too is the culture of the school a code — both a language and a set of rules for behavior — that is different from the code used at home.

Children who grow up in a white middle class culture come to school with an enormous advantage, Delpit points out. They can go about the business of learning to read or do arithmetic without having to learn a whole new way of talking and acting. Delpit refers to their command of the ways of the school as "cultural capital," a fund of tools and skills that makes schoolwork easier. She argues that teachers must enable children who come to school without this cultural capital to acquire it, first by making it clear that their home language is rich, expressive, and appropriate for many contexts, and then by explaining that school requires a different language and different ways of acting. This arrangement amounts to a kind of pragmatic, "no-fault" accommodation between the culture of school and the culture of home and neighborhood.

Beyond the initial step of establishing that school requires ways of talking and acting that may be different from those in use at home, Delpit argues for a balance between "progressive" methods and explicit instruction in the conventions of Standard English and in ways of behaving that are appropriate for school. For example, she subscribes to many of the beliefs underlying "process" approaches to writing instruction, such as the importance of writing for real audiences, and for purposes and on subjects that are meaningful to the writer, himself. But, says Delpit, students

who do not know the vocabulary, syntax, spelling, and punctuation of Standard English will not necessarily "pick up" these conventions on their own, simply by writing, and they will suffer the consequences in later education and in the job market if they do not do so. She argues for a style of teaching writing that combines "mini-lessons" in an explicit instructional style with opportunities to write about topics of interest to the student, along with relatively unstructured "conferences" designed to improve the student's ability to say what she means to say within the conventions of Standard English.

Delpit makes a similar case for a balance of direct instruction and "whole language" approaches in teaching children to read. Advocates of "whole language" or "literature-based" instruction emphasize the importance of having children read engaging literature, often of their own choosing. They argue that children develop richer vocabularies, better reading skills, and a love of reading by reading stories and other literature that they find meaningful and absorbing. Delpit agrees, but points out that some children need specific instruction in phonics and the basic conventions of written English in order to profit from such reading experiences. Whenever students may lack acquaintance with language or codes of behavior necessary for their success in school, she says, it is far better to teach these explicitly than to force some students to guess at what others learn from home and other out-of-school contexts for learning, such as conversations with their parents, summer camps, tutors, museums, computer programs, and the like.

If Delpit argues on the one hand that many African-American children must learn and adapt to the culture of the school, she argues on the other that schools should adapt their styles of discipline to fit those employed in many African-American homes. She points out that some middle class teachers avoid asserting their power directly and forcefully. They assume that their position as teacher gives them authority, and that no more than suggestions or questions should be necessary to shape children's behavior. Some may also believe that direct, forceful assertions of power are undemocratic and undermine the goal of helping students learn to control their own behavior and function autonomously.

According to Delpit, however, in many African-American homes and communities, authority comes not from the role or position that a person occupies, but from the force and skill she uses in asserting authority. Mild, indirect efforts to gain cooperation are seen as signs of weakness. Only clear, explicit demands for good behavior and insistent pressure for good performance are taken seriously. Delpit quotes a young black man who speaks admiringly of a teacher as "mean":

> *We had fun in her class, but she was mean. I can remember she used to say, "Tell me what's in the story, Wayne." She pushed. She used to get on me and push me to know. She made us learn. We had to get in the books. There was this tall guy and he tried to take her on, but she was in charge of that class and she didn't let anyone run her. I still have the book we used in her class. It has a bunch of stories in it. I just read one on Coca-Cola again the other day.*

Thus, we are faced with an apparent conflict between Ferguson's conclusion that no special techniques are required to teach African-American students well and Delpit's insistence that schools need to recognize and adapt to the cultural patterns of many black homes. Much earlier, in examining research on students from low income families — which include a disproportionate share of black students — Brophy reached a conclusion that embraced both views. Though emphasizing that such students simply need programs based on "general principles of good instruction," he added that they could profit especially from "more focused, structured, and redundant teaching, and more personalized and supportive interactions" along with positive expectations and a strong academic focus.[15] Perhaps direct instruction and explicit discipline provide the footing for success, while challenging curricula and instruction based on sound general principles represent the capstone.

Find reasons to expect each student to succeed.

That teachers' expectations strongly influence students' effort and performance has been known for decades, if not centuries.[16] The effect of low expectations was a major theme in Simmons' and Ebbs' recent *News and Observer* series on minority achievement gaps in North Carolina. But it is not always clear just what is meant by "expectations." In the "soft" version, it simply means believing that the full range of children in our schools are capable of good academic work — the oft-repeated statement that "all children can learn."

One of the most powerful explorations of the expectations theme is by the social psychologist Claude Steele. In a

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memorable phrase, Steele speaks of treating every child as "a valuable person with good prospects."[55] That is, as a person who has some real talent or talents that are going to take him places, that are going to enable her to make people sit up and take notice.

As Steele notes, research shows that most African-American students value their teachers' approval highly, especially when it comes to their performance in school. More highly, in fact, than their parents' approval. The same is not true for most white students. The value that black students place on their teachers' approval makes them more vulnerable to the way teachers view and treat them. Not only are they vulnerable to overtly racist treatment. But they are also vulnerable to being overlooked. To the simple failure to recognize their talents, their potential.

As children and adolescents move through encounters with intellectual tasks, such as learning to read or to solve mathematical problems, they form views of themselves based on that experience. Developmental psychologists point out, however, that in addition to the interior experience we all have, recognition from important people around us is essential to confirm us in a positive sense of ourselves and our abilities. Confirmation from outside is essential to the development of the kind of sturdy self-esteem required to bear up and persist when difficult tasks challenge our sense of competence and worth.

Without such sturdy self-confidence, Steele shows, minority children are vulnerable to the special challenges of "stereotype threat."[56] That is, minority students must contend not only with fear of failing at an intellectual task, a fear that affects nearly all of us, but also with the fear that they will confirm negative stereotypes if they do. So the pressure they experience in challenging situations is doubled. To avoid failure under such pressure, some conclude that their prospects of succeeding in school are small, that academic success is simply not a promising basis for developing or maintaining their self-esteem. So they simply refuse to engage with school, withdrawing into an attitude of indifference. The same dynamic also affects some students who do well in school. Of one such student at the University of Michigan where he then taught, Steele observed that she seemed "isolated from her academic life, like a disinterested visitor."[57]

Steele went on to point out that such an attitude of disengagement can spread throughout a school, becoming a defining part of its student culture. When this happens, he wrote, a student's "identity as an authentic black is held hostage," made incompatible with a commitment to succeed at the intellectual tasks at the center of the school's mission. Steele's observation supports the finding by Fordham and Ogbu in one predominantly African-American high school in Washington, DC.[58] In their famous phrase, doing well academically meant that a black student had to bear the "Burden of Acting White" on top of the burden of overcoming stereotype threat.

Cook and Ludwig, using data from a large national database, challenge the Fordham and Ogbu finding.[59] They point out that other researchers have not found the same negative attitudes about achievement in the high schools they studied. Based on case studies of several North Carolina high schools with different representations of minority students in upper tracks, Darity, Castellion, and Tyson have recently argued that high achievement is stigmatized as "acting white" only in high schools with few or no black students in upper tracks.[60] In other words, the "acting white" stigma is the creation of discriminatory practices in some schools, not an attitude that is endemic to black youth culture. If virtually no black students are included in a school's higher tracks, it might be logical for black students in that school to conclude that high achievement is for whites only.

Cook and Ludwig also point out that academic success is often derided in the white student culture with the use of terms such as "nerd" and "grind," and argue that anti-academic attitudes may be no stronger among black students than among whites. Noting that national data show that no group of students really works very hard in high school, Ferguson draws an analogy to a race where all the runners are just jogging.[61] With a burst of effort, he writes, African-American students could clearly overtake their white counterparts. The burden of acting white may not explain why they are behind, but may explain why black students in some schools don't run harder to catch up.

To characterize teachers who recognize the full humanity and potential of their African-American students, Steele uses the term "wise," as in, "I'm wise to who you really are." The term is applied to people who are not part of a stigmatized group but accept and are fully accepted by those who do bear a social stigma, people "in whose eyes the full humanity of the stigmatized are visible." Steele urges whole schools to become "wise" supporters of minority students' learning and development. The "wise school" treats African-American and other minority students as valuable people with good prospects and uses the close relationships thus established to offer security while also challenging students academically. According to Steele, these conditions — high expectations and warm personal relationships — must both be present in the "wise school." Neither really promotes good performance without the other.

Steele is also a strong integrationist. In his approach, however, minority cultures are treated as vital parts of the mainstream culture. He invokes novelist Ralph Ellison's contention that African-American culture has never really been outside of the mainstream, but "one of its major tributaries." African-American culture — and by implication, other cultures that are "tributaries of the mainstream" — must be integral parts of the school's curriculum, so that students can see themselves and their history in the subject matter of study. By deliberately cultivating these conditions in the life of the school and its curriculum, Steele writes, schools can overcome stereotype threat and the resulting disidentification that limits minority students' learning.

Demand success by holding both schools and students accountable.

Though Steele's vision is inspiring, neither his nor others' persuasiveness are likely to bring about a system-wide change of heart. As Ferguson points out, most interventions that attempt to change people's attitudes through inspiration or persuasion are more likely to change what they *say* than what they *do*.[62] Yet, if expectations are as powerful as Steele and others suggest, some means of raising expectations is urgently needed.

Standards for school and student performance backed up by accountability systems are not often connected with calls for a change in expectations for minority students. But accountability systems do represent efforts to re-set expectations for students on a system-wide basis, minority students prominently included. Standards and accountability systems may be thought of as a "tough love" version of high expectations — demanding that students do the good work they are capable of.

School and student accountability systems assume that, as the cliché goes, "all students can learn." Moreover, they say to teachers, "Whether you believe they can learn or not, you are responsible for seeing to it that they do." And they say to students, "Whether you believe you can learn or not, you are responsible for putting out the effort to do so." The underlying premise is that with the proper system level expectations and incentives, individuals' behavior will change, and individual attitudes or expectations will ultimately follow behavior, and be internalized.

There are some hopeful signs that accountability systems can improve student learning and close gaps, but according to Ladd, there is not yet sufficient evidence to know with confidence whether they can really do so.[63] Texas and North Carolina offer two cases in point. The Texas Education Agency has claimed not only that their accountability system has raised student performance levels, but also that it has substantially reduced the gap between white and minority achievement. But these optimistic reports have been called into question by independent scholars who argue that the improvements are inflated by high rates of exclusion of handicapped and ESL students from testing, as well as by questionable test preparation practices, and perhaps even by outright cheating.[64] Even if the Texas gains are legitimate, Ladd points out, they cannot be attributed solely to the accountability system. Many other policy changes have been initiated during the same period.

North Carolina is another state often praised for dramatic improvements in student performance, and our gains have also been attributed to the state's accountability system. Here again, caution is in order. First, much of the recent improvement occurred before the ABCs accountability system was in place. It is also possible that gains in North Carolina are inflated in the same way that Texas' gains appear to be, though the rising scores on the ABCs examinations track more closely with the independent evidence provided by NAEP assessments than do Texas students' rising scores on that state's examinations.[65]

Yet the gap in the percent of black versus white students at or above grade level has closed significantly in the years since the ABCs school accountability system was instituted in North Carolina.[66] The increased rate of improvement after the ABCs were instituted makes it plausible that the accountability system has contributed to closing the gaps. The NC Department of Public Instruction is currently piloting in five districts an arrangement under which schools earn incentive awards only if all ethnic groups meet or exceed targets for student growth. If the pilots are judged a success and the arrangement is generalized across all districts, the ABCs accountability system should make a still greater contribution to closing the gap.

Results from Ladd's survey of principals' responses to the ABCs accountability system are consistent with the proposition that incentives can change behavior even in the face of attitudinal resistance. Ladd's data indicate that even those principals who initially opposed the accountability system have changed what they emphasize and reward. Principals reported making a number of changes to improve instruction, and "overwhelmingly" (over 80%) said they focused more attention on low-performing students, sometimes shifting existing resources as well as using new resources for this purpose.

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They reported increased use of tutoring, more individual assistance to students, more use of ability grouping (see above), and changes in reading programs. Over time, such changes could well help reduce the black-white achievement gap.

But, Ladd warns, the gap-reducing effects of this shift of focus *within* schools could be eroded by the flight of teachers from low-performing schools to schools which they see as more likely to earn rewards and less likely to come in for embarrassing negative publicity or sanctions. As already indicated, teacher quality is among the most important determinants of student learning. Anything that lowers the quality of teachers for students in lower-performing schools is likely to make matters worse. Thus, current proposals to offer incentives to attract good teachers to low-performing schools may be essential to preserve the positive effects of the accountability system.

Turning from school accountability to student accountability asserted through promotion standards, such standards have been vigorously opposed by some advocates for minority students.[67] Despite these reservations, after prolonged discussion and many refinements, last year the State Board of Education adopted a set of "student accountability" standards along with related steps to reduce the need for retention. The standards specify that students who fail End-of-Grade examinations even after repeated attempts accompanied by remedial help may not be promoted without a well-grounded and well-documented exception granted by their principals. The promotion standards take effect for fifth graders this spring, and for students in grades three and eight over the next few years. Thus, it will take some time to assess the full effects of North Carolina's policy.

Meanwhile, the best evidence concerning the effects of "no social promotion" policies comes from Chicago. The Chicago Public Schools recently instituted a policy that bars social promotion, establishes "gateway" grades where students must pass standardized tests to be promoted, creates mechanisms to identify students at risk for retention, provides after-school assistance during the school year and mandatory summer instruction for those who need it, but does retain students who fail to meet the standards even with the extra attention.

Melissa Roderick's early research on the consequences of the Chicago policy indicates that most students made impressive standardized test score gains.[68] On average, students gained almost two grade levels more than would have been expected without the policy in place. Encouragingly, students with the lowest prior scores made the largest measured gains. With the generally positive findings came two troubling notes: third graders' learning gains actually declined after the policy was implemented, and students who were retained were not helped by a second pass through the grade they failed. Roderick argues that the impact on third graders clearly calls for revision in the policy, and that equally clearly, more support must be provided to help retained students during the year after retention. Yet the large gains overall and especially those made by previously low-achieving students do suggest that promotion standards accompanied by strong efforts to help students at risk of retention can help close the gap.

Support students with individual tutoring, more comprehensive reforms, summer programs, and follow-up assistance.

As advocates for at-risk students have argued forcefully, it is unreasonable to expect and demand success without providing at-risk students with effective assistance to meet the expectations and standards.[69] Accumulating research shows, as indicated earlier, that high quality, academically-focused preschool programs can help, as can smaller classes in the early grades. Research also provides some guidance about what to do — and what not to do — for students who still do not catch up with their peers.

First, what not to do. A 1997 evaluation of Title I, the largest federal program for disadvantaged students, indicated that many common ways of using Title I funds are ineffective, including the use of classroom aides, modest reductions in class size, and "pull-out" small group remediation.[70]

In contrast, individual tutoring does appear to be effective. Slavin's careful review of research on tutoring specifies characteristics of both effective tutoring practice and effective tutors.[71] According to Slavin, one reason that small group pull-out programs are ineffective may be that students miss the opportunity to learn from regular classroom instruction while they are in pull-out sessions. Effective tutoring supplements rather than supplants a part of normal classroom instruction. Effective tutoring is also done one-on-one, enabling the tutor to concentrate on each student's needs individually, and to check for comprehension before moving on. Programs that spell out the role and instructional approach the tutor should take — that make it clear what the tutor should and shouldn't do, in what order — are more effective than programs that

leave the approach to the discretion of each individual tutor. In most effective programs, tutors model or demonstrate the skills to be cultivated, then coach the student through the process, gradually reducing this "scaffolding" as the student grows more proficient. The evidence for the effectiveness of tutoring is strongest for mathematics. Some believe this is because mathematics involves specific procedures (algorithms) that can be modeled and taught explicitly.

Not surprisingly, research indicates that the most effective tutors are certified teachers. What may surprise some, however, is that tutoring of younger students by older ones ("cross-age tutoring") seems to have the next largest net effect on student learning — larger than tutoring by aides or volunteers. In part, this may be because the tutors themselves learn through the process along with the students they are teaching (tutees). Paraprofessionals or aides have generally not been found to be effective tutors, but there is some evidence that if the aides are selected specifically for their good reading and writing skills and are given proper training, they can be effective.[72]

Though tutoring clearly can help, even advocates of tutoring concede that it is often not sufficient to close achievement gaps. They argue for "comprehensive school reform." The proposition that coordinated whole-school change is necessary to improve outcomes for disadvantaged students was first put forward in the 1997 evaluation of Title I mentioned earlier.[73] Picking up this theme, Slavin and Fashola proposed that thoroughgoing changes in curriculum, instruction, classroom management, and assessment for all students, supported by sound professional development and broadened participation in school governance, would represent a more effective route to better outcomes. There is considerable evidence to support the proposition that whole school reforms are more successful than reforms that target individual elements within a school.[74]

The Comprehensive School Reform Demonstration Act of 1997 — sometimes referred to as the Obey-Porter Act, after its primary sponsors — established a grant program to support adoption of whole-school models designed on the basis of research and supported by evidence of effectiveness. Obey-Porter specifically mentioned seventeen such models, and many more now exist.[75] According to the Obey-Porter Act, nine elements characterize a Comprehensive School Reform model.[76] A model should:

1. Use effective, research based strategies,
2. Be comprehensive in nature and address the factors of teaching and learning,
3. Include professional development and training,
4. Have measurable goals and benchmarks,
5. Assure that administrators and teachers support adoption,
6. Address parental and community involvement,
7. Provide external technical support and assistance
8. Use specific methods to evaluate student and implementation success, and
9. Provide a mechanism to coordinate and utilize resources from all possible sources.

While the Obey-Porter Act claimed that all seventeen models were designed on the basis of solid research, the strength of research support for the models varies greatly. Evaluations of the actual effects of implementing the models are also still in progress. Yet there is sufficient support for some models to warrant careful consideration by schools and districts searching for ways to close achievement gaps. The Appendix to this report includes a list of selected Comprehensive School Reform Models and our assessment of the research support for each of them.

Even with more comprehensive efforts to support success, however, some students will still not reach the levels of performance required for promotion and success in subsequent grades. As Chicago's example demonstrates, a mandatory summer program for students at risk can substantially reduce retentions.[77] The six to seven week Chicago program was taught by qualified teachers, featured small classes (sixteen students or fewer), focused squarely on the required reading and mathematics curricula, and allowed for individual attention (one or more tutors per class). As a result of the program, retentions were cut by about one-fifth.

Yet even the Chicago summer program did not eliminate retentions altogether. Students who were retained did neither better nor worse the following year. Though no harm to retained students was immediately evident, research on the effects of retention gives reason for worry — some effects, such as an increased dropout rate, become evident only years later.[78] One problem with the Chicago model is that students received little extra assistance during the year they were kept back. They were recycled through the same grade, apparently on the premise that they would do better with a second pass through the same material. They did not. Given the potential for long term harm as well as the costs of an extra year of schooling, simple retention of this sort is difficult to justify. Careful diagnosis and continued assistance for retained students is clearly called for.

North Carolina's promotion standards do provide for a "personal education plan" for retained students, but it is not yet clear how vigorous the support for retained students will actually be. Research on the implementation of other policies over at least three decades suggests that the implementation of per-

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sonal education plans will vary sharply from district to district, school to school, and even from student to student.[79] Districts that want to minimize the negative effects of retention may wish to suggest or even to specify an approach to supporting retained students rather than leaving it to each school to develop personal assistance plans on their own.

Desegregate schools and programs within schools.

Until recently, one might have assumed that desegregation is a step that has already been taken. Some would also argue that it was a useless step, or at least one whose results did not justify the extraordinary social and political dislocations that accompanied it. Research on national samples generally shows that desegregation made a much smaller difference in student learning than its advocates had hoped.[80] Among the critics of desegregation are many African-Americans who believe that their communities lost at least as much as they gained through desegregation, including a measure of control over their children's education and opportunities for them to play leadership roles, develop self-esteem, and flourish in more supportive environments. Many black as well as white North Carolinians now routinely assert that the goal should be to make all schools good schools, not to spend large sums to bus students around merely to assure that black and white children sit next to each other.

Yet there is strong evidence that segregation is neither a thing of the past nor merely a superficial matter of who sits next to whom. Desegregation is not an irreversible process. As Simmons and Ebbs have shown, North Carolina's schools are resegregating at a rapid pace. North Carolina now has 220 schools with minority enrollments of 80% or more — double the number of such schools in 1993.[81] Resegregation is most pronounced in the Guilford and Forsyth school districts. But the phenomenon spreads all across the state. It is proceeding rapidly even in Charlotte-Mecklenburg, site of the famous Swann decision that desegregated schools some thirty years ago.[82] Fewer than 60% of Charlotte-Mecklenburg schools can be classified as "diverse".[83] Ironically, schools in Charlotte-Mecklenburg have grown more segregated even as housing has become less so.[84]

There is also strong evidence now, as there was forty-five years ago, that separate is not equal. In substantially desegregated North Carolina schools, just over half of African-American students (51.1%) score at or above grade level on state tests. In segregated schools, the figure is 7.5 percentage points lower (43.6%).[85] According to Simmons and Ebbs, middle class black students suffer the greatest damage from segregation: "In district after district, these students score significantly worse in segregated schools than in an integrated setting."[86] Mickelson has shown how the significant but modest differences between black and white students resulting in part from segregation at the elementary school level are compounded as students are divided into different tracks at the high school level.[87]

It appears that who sits next to whom is not trivial. It makes a difference in student learning. African-American students learn more in desegregated settings. And as Simmons and Ebbs have shown, white students do not learn less. Until the concentration of minority students exceeds about 80%, there is no discernible negative impact on white students' learning. Mickelson goes farther, pointing to data showing that white students actually do better in diverse classrooms than in segregated white ones.

If desegregation does make such a significant difference in student learning, why has research using large national data bases generally found the effects to be so modest? One reason may be the patterns of resegregation within nominally desegregated schools. In the previously mentioned study of academically challenging programs and courses in North Carolina schools(Academically and Intellectually Gifted programs, Honors, Advanced Placement, and International Baccalaureate courses), Darity, Castellino, and Tyson found that the percentage of black students in such programs and courses is generally substantially lower than the percentage of black students in the schools where the courses are offered.[88] In some high schools with a large African-American presence, virtually no black students were assigned to AP courses. The distribution was only slightly more equal in Honors courses. AIG programs often have a similar resegregating effect within elementary schools, most strikingly within many magnet schools created specifically to reduce segregation without resort to busing.[89] So "desegregated" schools often harbor resegregation within the school, and this masks the contribution of genuine desegregation to improved student learning.

Just how desegregation matters is complex. Some, including educators recognized for their ability to succeed with diverse schools and classrooms, stress that it is easier to establish higher expectations and a more disciplined environment in integrated schools and classrooms. But there is also clear evidence that schools with a substantial white

presence get more resources of the sort that matter to student achievement. Both Simmons and Ebbs and Mickelson report that predominantly black schools have much higher percentages of uncertified and inexperienced teachers than do predominantly white or integrated schools. As we pointed out above, teacher quality is one of the most powerful determinants of student learning. As Grissmer has shown, other resources, such as teachers' access to instructional materials, also make a difference in student learning.[90] Mickelson has documented that these resources are also distributed in a manner that favors predominantly white and integrated schools.

So separate is not equal, either in terms of student learning or in terms of the resources devoted to African-American students in segregated schools. Desegregation of schools and within schools helps equalize opportunities to learn, expectations, discipline, key resources, and student achievement. It is possible to reduce the black-white gap without desegregating schools, but it is more difficult to do so. Without genuine desegregation, it may be impossible to eliminate the gap altogether

Conclusion

In 1999, Jencks and Phillips' *The Black White Test Score Gap* examined trends in the gap over the past thirty years or so, as well as several reasons why the gap seems to persist. The examination of trends — particularly the chapters by Hedges — provided the basis for renewed hope that the gap could be eliminated. The gap narrowed rapidly from the late sixties until the early eighties. In fact, if the progress of that period had continued at the same rate, by now there would be no gap at all. Unfortunately, the upward trend lines leveled off in the early eighties. Yet the rapid progress that *was* made confirms that the gap is not an immutable fact of nature or of intractable socioeconomic patterns. The book set off a new wave of research designed to sort out the complex set of variables that recreate and maintain the gap from generation to generation. As that research bears fruit in the next decade or so, fresh new ways of attacking the gap may emerge.

In the meantime, as we have shown, enough is already known to close the gap sharply. The ten steps suggested here are not the only possible approaches. And as we noted at the outset, none of them is both easy and inexpensive. In the process of trying to carry them out, several states and districts have encountered unexpected pitfalls, some of which we have pointed out in our discussion. Yet it is clearly possible to take these steps, and they do yield results. States, districts, and schools that want to close the gap can do it. We hope that this summary of research will provide some useful guidance to help them do so.

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Appendix: Comprehensive School Reform Models

Below we describe the sixteen models with the soundest basis of research and strongest evidence of effectiveness. To obtain more information about these and other whole-school designs, the following resources will be helpful: *An Educators' Guide to Schoolwide Reform*,[91] *Comprehensive Models for School Improvement: Finding the Right Match and Making It Work*,[92] *Resources for School Improvement*,[93] and *Catalog of School Reform Models: First Edition*.[94]

- **Success for All/Roots and Wings.** Success for All and its mathematics, science, and social studies counterpart, Roots and Wings, have particularly strong evidence of effectiveness. The Success for All program, which addresses reading, writing, and language arts, must be in place one year before Roots and Wings may be implemented. These programs have been shown to be particularly adept in addressing the needs of at-risk and minority students. A study by Slavin, et al.[95] has shown that Success for All students in the lowest twenty-five percent of their grades have averaged gains in grade equivalencies of between three months and one full year when compared to control students.[96] Another study found the percentage of Roots and Wings students scoring at a "satisfactory" or "excellent" level on the Maryland School Performance Assessment Program was "substantially more than the average for all Maryland schools."[97] It is important to note that the research is more limited for the newer Roots and Wings than it is for the more established Success for All.[98]
- **DISTAR.** Direct Instruction or DISTAR targets low socioeconomic status students in the elementary grades by providing very structured teaching techniques. Studies have compared control and DISTAR students on the basis of academic and cognitive achievement and self-esteem. DISTAR students outperformed the control students on the Metropolitan Achievement Test (MAT) language and mathematics computation sections.[99] The scores in reading comprehension and mathematics problem solving were also higher, although not significantly, for DISTAR students. Other studies have shown positive overall student achievement as a result of this design.[100] In addition to positive test score gains, DISTAR students also had a lower drop-out rate, a higher college acceptance rate, and personally reported higher levels of self-esteem than the control group students.[101]
- **High Schools That Work.** This design focuses on "career-bound high school students" by combining the traditional academic coursework with vocational instruction.[102] Students show positive gains on the National Assessment of Educational Progress (NAEP) and these results appear to be consistent and replicable.[103]
- **Consistency Management and Cooperative Discipline.** Discipline of students in all grades of inner city schools is the focus of the Consistency Management and Cooperative Discipline (CMCD) model. The model encourages students to "buy-in" to orderly classroom management by involving them in establishing and enforcing the rules governing their behavior. One study found "significant positive effects on standardized achievement tests" for students in five of Houston's inner city schools with high black and Latino populations.[104] In another study of majority Latino schools, students outscored the control group in mathematics scores when a combination mathematics program / CMCD model was implemented.[105]
- **Edison Project.** The Edison Project reform model is an organization that contracts with local school districts to completely manage specific schools by instituting their own guidelines, curriculum, and personnel. In a study of two Edison schools, kindergartners were .26 grade equivalents and first graders were .23 grade equivalents ahead of the control students. There were no significant differences between Edison second graders and the control group. Another Edison school reported their kindergarten and first grade students gained two months on the control group.[106]
- **School Development Program.** The School Development Program focuses on building commonalities among the school, parents, and community and promoting faculty input on changes to increase student performance. Three teams address the program's areas of focus: school planning and management, mental health, and parent involvement.[107] The overall results are mixed with substantial variations between school sites. However, rigorous studies report this model's

promising effect on student achievement.[108] Gains in student self-concepts and school climates have been more consistent than academic achievement.[109]

- **Expeditionary Learning / Outward Bound.** The Expeditionary Learning / Outward Bound model is based on the ideas that students learn by doing and that "developing character, high expectations, and a sense of community is as important as developing academic skills and knowledge."[110] Even though this is a new model, the research base is promising and points to positive gains for students.[111]
- **Core Knowledge.** The Core Knowledge reform model is characterized by extremely specific curriculum focusing on a "common core" of knowledge that "define(s) an educated individual"[112] by connecting new learning to the student's existing knowledge base.[113] Study results are inconsistent although this may be due to improper implementation in some schools.[114] Data show minimal gains, no gain, or small declines in comparison to control groups. Note, however, that a strengthened, more technology-based version of the model – called Modern Red Schoolhouse (see below) — seems to have produced better results.
- **Modern Red Schoolhouse.** The Modern Red Schoolhouse design is a technology-based model that focuses on the "core academic subjects" in the middle and elementary grades.[115] Student performance on standardized tests has improved for elementary schools participating in this design.[116] These results, however, have been questioned due to concerns over the research methodology.[117]
- **Accelerated Schools.** Accelerated Schools are based on three principles: "unity of purpose," "empowerment coupled with responsibility," and "building on strengths."[118] This reform focuses on reducing remediation and an expanding "constructivist, engaging teaching strategies."[119] The evidence to support the positive effect of Accelerated Schools is mostly anecdotal and some preliminary studies report mixed results.
- **ATLAS Communities.** The ATLAS Communities reform combines facets of the School Development Program, characteristics of other reforms, and unique features. One particular unique feature of this model is the emphasis on creating learning environments for students to actively participate in their own education. Only limited and preliminary data are available but show positive results in two Maryland schools.[120]
- **Co-NECT.** Co-NECT is characterized by complex, interdisciplinary projects and performance based assessments[121] with an emphasis on technology and multi-year student grouping.[122] Limited data point to positive gains in specific subject areas.
- **National Alliance / America's Choice Design Network.** The National Alliance design is limited in available evidence of effectiveness. The preliminary data point to positive gains in student performance as a result of the implementation of this model.[123]
- **Audrey Cohen.** The Audrey Cohen reform institutes learning and instruction to promote community / society contribution. The instructional activities culminate in practical activities and projects in which the students participate. The data are limited to anecdotal information which report positive gains in specifically identified schools.[124]
- **Paideia.** This approach emphasizes an equal quality of education for all students by utilizing the instructional methods of lecture, coaching, and small seminars using the Socratic Method.[125] The Paideia schools that have been studied have shown mixed results.[126] Some studies that have indicated gains for Paideia students have been shown to lack reliability.[127]
- **Coalition of Essential Schools.** Some studies of the Coalition of Essential Schools have reported student performance to be less than or equal to the control group.[128] It is important to note that studies have shown that the model was not adequately implemented in most classrooms.[129]

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THE NORTH CAROLINA EDUCATION RESEARCH COUNCIL

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First in America Special Report: Eliminating the Black-White Achievement Gap

Charles L. Thompson and Sam D. O'Quinn, III

North Carolina Education Research Council
June 2001

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NC SCHOOLS

FIRST IN AMERICA

2010

First in America Special Report: Eliminating the Black-White Achievement Gap

The gap between the academic achievement of students from minority groups and that of the white majority is once more at the forefront of educators' and policymakers' agenda, in North Carolina as elsewhere around the country. Through its *First in America* initiative, the North Carolina Education Cabinet — leaders of the K-12, community college, college, and university levels of the state's education systems — set the target of eliminating the minority achievement gap by the year 2010.

TARGET	INDICATOR
• NC will eliminate the minority achievement gap.	Percentage point gap in performance between white and minority students on NAEP and NC EOG and EOC examinations

	BLACK	HISPANIC	AMERICAN INDIAN
NAEP	28	24	21
EOG & EOC	27	18	14

Whether measured by the National Assessment of Educational Progress or the North Carolina End-of-Grade and End-of-Course examinations, the gaps between the performance of white and minority students are substantial. The gaps have narrowed to some degree in recent years, but if they are to be eliminated altogether by 2010, the rate of improvement will have to increase sharply. This report focuses primarily on the gap between African-American students and their European-American counterparts, and on the ways schools may either recreate and preserve the gap or eliminate it. Future reports will deal with the gaps experienced by other minority groups.

Research does not point to any dramatic "breakthrough" interventions, but to a series of apparently straightforward changes that schools could make in order to close the gap. While the steps outlined here seem straightforward, important complexities and potential pitfalls are associated with most of them. None is easy to carry out. Some are costly — either in dollars or in political terms. Still others involve changes in knowledge, skills, and ways of thinking that are hard to bring about. Effective steps that are both cheap and easy have either been made already or will be discovered only through further research.

by Charles L. Thompson and Sam D. O'Quinn, III

NC Education Research Council

June, 2001

EXTEND HIGH QUALITY, ACADEMICALLY-FOCUSED EARLY CHILDHOOD EDUCATION TO ALL CHILDREN AT RISK OF SCHOOL FAILURE.

By the time students enter kindergarten, the black-white gap is already about half its ultimate size. Yet high quality early childhood programs that focus on academic preparation for school can reduce the gap sharply, and the effects last well into the schooling process. While early childhood care and education (ECCE) programs produce only short-term gains in IQ scores, they can have long-term benefits in school achievement, grade retention, special education placement, and socialization (Barnett, 1995). The gains are significant and lasting only in ECCE programs of high quality — those with low child-staff ratios, well-educated staff, and careful supervision.

In addition to quality, the focus of ECCE programs is also crucial. Programs that make a deliberate effort to familiarize children with letters, sound-letter correspondence, numbers, and other content important to success in the early grades give at-risk children an advantage when they start school. Early childhood educators will need to find approaches that give disadvantaged children opportunities to get ready for school, but without the pressure or rigidity that can engender anxiety and dislike for learning. As a recent study of Georgia's Pre-K program shows, teachers who use and build on children's natural interests rather than using more rigid approaches produce better learners in kindergarten and the early grades (Henry, 2001).

North Carolina already has an award-winning early childhood program in Smart Start, but many child care providers do not give sufficient emphasis to academic preparation, and as many as 10,000 needy four year olds are receiving no services at all (More at Four Pre-K Task Force, 2001). Governor Easley's proposed More at Four program is designed to address these problems. Results from Pre-K programs in other states are encouraging, despite some significant implementation pitfalls (addressed in a separate *First in America Special Report* due out later this summer).

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ENSURE THAT AFRICAN-AMERICAN CHILDREN ARE TAUGHT BY ABLE, WELL-PREPARED, EXPERIENCED TEACHERS.

Research has shown differences in the effectiveness of teachers to be the single most important factor accounting for differences in students' academic growth from year to year (Wright, Horn, and Sanders, 1997). Students who get three effective teachers in a row in grades three through five score fifty percentile points above students who get three ineffective teachers in a row (Sanders and Rivers, 1996; Jordan, Mendro, and Weersinghe, 1997). The effects of even a single ineffective teacher are enduring enough to be measurable at least four years later (Sanders and Rivers, 1996). Research is also clear about several key characteristics of good teachers:

- Teachers with higher verbal ability test scores seem more effective in promoting student learning, presumably because the ability to give clear presentations and to sort out students' confusions is central to teaching (Bowles and Levin, 1968; Coleman et al., 1966; Hanushek, 1971; Murnane, 1985).
- While holding just any advanced degree may not improve performance, advanced education in the subject that the teacher actually teaches does increase teachers' effectiveness (Hawk, Coble, and Swanson, 1985).
- Coursework in teaching and learning also helps (Ferguson and Womack, 1993), especially in combination with solid subject matter knowledge (Druva and Anderson, 1983). Formal teacher preparation and licensure requirements seem to help assure that teachers have both.
- Beyond a point, more experience is not necessarily better, but inexperienced teachers are generally less effective than teachers with at least five years of experience (Murnane and Phillips, 1981; Klitgaard and Hall, 1974; Rosenholtz, 1986).
- Not surprisingly, the evidence seems strongest for teachers with a combination of strong subject matter knowledge, knowledge of teaching and learning, and several years of experience (Ferguson, 1991; Ferguson and Ladd, 1996).
- Finally, a teacher who is intellectually able, well-prepared, and experienced in teaching in a particular subject or at a particular grade level is not necessarily effective in teaching other subjects or other grade levels (Druva and Anderson, 1983; Hawk, Coble, and Swanson, 1985; Shulman, 1987; Darling-Hammond, 1992; Monk, 1994; Monk and King, 1994; Goldhaber and Brewer, 1997; Goldhaber and Brewer, 2000). Teachers should be assigned to teach only in the fields and grade levels for which they are prepared.

In sum, then, teacher quality exerts a powerful influence on student learning, and the characteristics of effective teachers can be identified with some confidence. Yet in many states — including North Carolina — minority children are regularly assigned less qualified, less experienced teachers than are white children. In districts all across North Carolina, predominantly African-American schools are assigned unusually large percentages of inexperienced and uncertified teachers (Simmons and Ebbs, 2001; Mickelson, forthcoming). More equitable teacher assignment could sharply reduce the black-white achievement gap.

REDUCE CLASS SIZE IN THE EARLY GRADES.

Smaller classes in the early grades (K-3) can produce large and lasting gains in student learning:

- Only when classes drop below a certain threshold (no more than 20 and probably as few as 17) do large benefits appear and last into subsequent grades (Word et al., 1990; Finn, 1990; Finn et al., 2000).
- Small classes improve achievement by all students, but help minority and low-income students the most (Word et al., 1990; Finn and Achilles, 1990; Molnar et al., 1999).
- Small classes afford more individual attention through one-on-one tutoring and brief on-the-fly help from teachers (Molnar et al., 1999; Molnar, Smith, and Zahorik, 1999).
- Teachers of small classes report fewer discipline problems than in larger classes (Achilles, 1994; Molnar et al., 2000).
- Student achievement is not significantly improved in regular sized classes with a full-time teacher aide (Finn, 1998). Yet if aides are carefully selected for their verbal skills, trained, and assigned to tutor students one-on-one, they can contribute to improved learning (Farkas, 1998a; Farkas, 1998b).
- The longer students are in small classes, the more they benefit. For students to make enduring gains, they need to be in smaller classes for at least two years (Finn et al., 2000). With at least two years of smaller classes in grades K-3, students continue to learn more even after they move into larger classes at grades four and above (Finn et al., 2000).

Despite the clear advantages of smaller classes, there are significant obstacles to successful class size reduction initiatives. First, qualified teachers are in short supply. Since reducing all of its kindergarten through third grade classes to 20 students to one teacher, California has seen a dramatic rise in teachers who are teaching without a license (Bohrnstedt and Stecher, 2001; CSR Research Consortium, 2000). Second, smaller classes require additional classroom space and

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resources. As the *First in America 2000 Progress Report* has shown, inadequate facilities and materials are already a major problem for North Carolina's schools. And third, class size reduction may mean cuts in other programs. Taken together, these considerations strongly suggest phasing in class size reduction, focusing first on schools with large numbers of poor and minority children.

ADOPT SOUND AND EQUITABLE GROUPING PRACTICES IN ELEMENTARY SCHOOLS.

The net effect of ability grouping appears to be a trade-off between two sets of effects: (1) the potentially positive effect of narrowing the range of skills that a teacher must accommodate in instruction, and (2) the potentially negative effects of undermining the confidence of low-group students, expecting less of them, and limiting their opportunities to learn. On average, grouping helps students only if it is done in a way that maximizes the positive effects and minimizes the negative effects.

By grouping students for only one or two subjects, grouping them differently for different subjects, and regrouping them on the basis of frequent reassessment, teachers can reduce the range of skills in each group without communicating that little is expected or demanded of students in low groups. In contrast, keeping students in the same groups or classes for all subjects — so-called "comprehensive grouping" — tends to stigmatize students in low groups. It seems to tell them that not much is expected or will be demanded of them. And it deprives them of the opportunity to learn the more advanced material available to students in higher groups (Slavin, 1987a; Slavin 1987b). By contrast, special accelerated programs for gifted students result in significantly more learning for these students (Kulik and Kulik, 1987).

What, then, are the implications for efforts to reduce the achievement gap? On balance, it seems wise to avoid "comprehensive" grouping, and at most, to group students only for one or two subjects. Further, it is essential to ensure that black students are proportionally represented in accelerated programs for gifted students. Without equitable representation, programs for the gifted will widen the black-white achievement gap. A recent NCDPI-commissioned study showed that across North Carolina, African-American students are sharply underrepresented in programs for academically and intellectually gifted (AIG) students. During the 1999-2000 school year, black students represented about 30 percent of the overall student population, but only about 10 percent of the enrollment in AIG programs (Darity, Castellino, and Tyson, 2001).

Especially in light of the dangers associated with grouping students of similar ability, a strong case can also be made for "cooperative learning," in which students of different abilities are deliberately assigned to work together in small groups to complete a learning task. If all students in a group are rewarded on the basis of what every student in the group learns, cooperative learning can be productive for high-performing as well lower-performing students (Slavin, 1987a; Slavin 1987b).

ASSURE THAT AFRICAN-AMERICAN STUDENTS ARE EQUITABLY REPRESENTED ACROSS CURRICULUM TRACKS IN HIGH SCHOOLS.

Curriculum tracking goes beyond simply grouping students of similar ability to offering students in different tracks significantly different sets of courses. Tracked instruction provides an advantage to high achievers by exposing them to material that is unavailable to students in lower tracks. Students' opportunities to learn place a ceiling on what they can learn. And upper tracks have substantially higher ceilings than lower tracks do.

Because African-American students are underrepresented in higher tracks and overrepresented in lower tracks, current tracking practices often widen the learning gap. The NCDPI-commissioned study mentioned earlier reveals a pattern of underrepresentation in high tracks and overrepresentation in low tracks all across North Carolina. For example, although African-Americans represent about 30 percent of North Carolina's student population, only about 13 percent of the students enrolled in the four AP courses taught most frequently in North Carolina schools are black, and only 7 percent of students who took at least one Advanced Placement examination were black (Darity, Castellino, and Tyson, 2001).

Whatever the merits or demerits of tracking, the practice seems unlikely to disappear from North Carolina high schools. Too many parents believe that tracking enables their children to get a better education than would an untracked curriculum. If tracking is maintained, it is essential for schools assure that black and white students are distributed across tracks in roughly the same proportions as they are found in the schools' total population. There is evidence that requiring students to take more challenging, college-oriented courses does raise their test scores, and does so without increasing dropout rates or harming minority or low-income students (Porter, 1998). In fact, minority and low-income students may benefit more than others from stronger course requirements. The courses a student takes are more powerful than socioeconomic background in determining his or her success in college (Adelman, 1999).

The UNC Board of Governors recently increased the minimum course requirements in mathematics and foreign language. If African-American students are included equitably in college-bound tracks, the new policy should improve their test scores and their chances of success in college. But if they continue to be underrepresented in the higher tracks, the tougher course requirements could actually widen the gap between black and white students. The ultimate impact depends on the action of local schools and districts.

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BRIDGE HOME AND SCHOOL CULTURES BY ADAPTING TEACHING AND DISCIPLINE PRACTICES TO SUIT STUDENTS' BACKGROUND.

Whether African-American children require or at least learn better from teaching practices that differ from those that work well with most white children remains in dispute. One wide-ranging review of quantitative research concluded that on the whole, there is little reason to believe that black children do require special instructional approaches (Ferguson, 1998). Yet one accomplished scholar makes a persuasive case that many black children profit from more explicit, direct instruction and discipline practices (Delpit, 1995).

This scholar argues that the culture of most schools in the U.S. is a white middle class culture that values and demands certain "ways of talking, ways of writing, ways of dressing, and ways of interacting" (Delpit, 1995). To succeed in school, children who do not grow up in a middle class culture need to learn the culture of school, more or less as one would learn a second language. Learning a second language does not imply that something is wrong with one's first language. The second language is simply a code for communicating and functioning in a context that is different from the code used at home. For many African-American and other minority children, so too is the culture of the school a code — both a language and a set of rules for behavior — that is different from the code used at home.

Teachers must enable children who come to school without this code to acquire it, first by making it clear that their home language is rich, expressive, and appropriate for many contexts, and then by explaining that school requires a different language and different ways of acting. Beyond this, teachers should balance explicit instruction in the conventions of Standard English with "progressive" methods of instruction. For example, students who do not know the vocabulary, syntax, spelling, and punctuation of Standard English will not necessarily "pick up" these conventions on their own, simply by writing, and they will suffer the consequences in later education and in the job market if they do not do so. Teachers should combine "mini-lessons" in an explicit instructional style with opportunities to write about topics of interest to the student, along with less structured individual "conferences" designed to improve the student's ability to say what she means to say within the conventions of standard English.

If many African-American children must learn and adapt to the culture of the school, this scholar's research suggests, schools should also adapt their styles of disciplines to fit those employed in many African-American homes. Some middle class teachers avoid asserting their power directly and forcefully. They assume that their position as teacher gives them authority, and that no more than suggestions or questions should be necessary to shape children's behavior. Yet in many African-American communities, authority comes not from the role or position that a person occupies, but from the force and skill she uses in asserting authority.

Thus, we are faced with an apparent conflict between a research review indicating that no special techniques are required to teach African-American students effectively and a countervailing view that schools need to recognize and respond to the cultural patterns of many black homes. Perhaps direct instruction and explicit discipline provide the foundation for success with challenging curricula and instruction based on sound general principles.

FIND REASONS TO EXPECT EACH STUDENT TO SUCCEED.

That teachers' expectations strongly influence students' effort and performance has been known for decades, if not centuries (Rosenthal and Jacobsen, 1968). Research shows that most African-American students value their teachers' approval highly. More highly, in fact, than their parents' approval. The same is not true for most white students. The value that black students place on their teachers' approval makes them especially vulnerable to the way teachers view and treat them. Not only are they vulnerable to overtly racist treatment. They are also vulnerable to being overlooked — to the simple failure to recognize their talents or potential.

"Stereotype threat" further compounds the vulnerability. That is, minority students must contend not only with fear of failing at an intellectual task, but also with the fear that they will confirm negative stereotypes if they do fail. So the pressure they experience in challenging situations is doubled (Steele and Aronson, 1998). To avoid failure under such pressure, some conclude that their prospects of succeeding in school are small and that academic success is simply not a promising basis for developing or maintaining self-esteem.

When this attitude of disengagement spreads throughout a school, a student's "identity as an authentic black is held hostage" (Steele, 1992) and working hard to achieve in school is seen as "acting white" (Fordham and Ogbu, 1986). A recent study of North Carolina high schools suggests that black students see working hard to achieve in school as "acting white" only when there are few or no black students in the upper track of their high school (Darity, Castellino, and Tyson, 2001). In other words, the "acting white" stigma may be the creation of discriminatory practices in some schools, not an attitude that is endemic to black youth culture. This underlines the importance of assuring equity in tracking practices.

By communicating to each student that he or she is "a valuable person with good prospects," teachers can help black students overcome the complex of vulnerabilities they face (Steele, 1992). The key seems to be a combination of warm personal relationships and high expectations. Neither really promotes good performance without the other. Warm relationships provide the security necessary for students to engage with academic work, while high expectations challenge them to excel.

DEMAND SUCCESS BY HOLDING BOTH SCHOOLS AND STUDENTS ACCOUNTABLE.

Standards and accountability systems may be thought of as a "tough love" version of high expectations — *demanding* that students do the good work they are capable of. The underlying premise is that with the proper system level expectations and incentives, educators' behavior will change, and attitudes or expectations will ultimately follow behavior. Evidence from a survey of North Carolina principals supports the premise. Over 80 percent of principals say that they now focus more resources on low-performing students, and principals who initially opposed the ABCs accountability system are just as likely to report that it has prompted them to make changes to improve instruction as are principals who favored it (Ladd, forthcoming).

There is not yet sufficient evidence to be sure that school accountability can help close gaps, but there are some hopeful signs that it can do so. The gap in the percent of black versus white students at or above grade level has closed significantly in the years since the ABCs school accountability system was instituted in North Carolina (Zhang, 2000). The increased rate of improvement after the ABCs were instituted makes it plausible that the accountability system has contributed to closing the gaps.

Student accountability, asserted through promotion standards, has been vigorously opposed by some advocates for minority students (North Carolina Justice and Community Development Center, 2001; Perry et al., 2000; Ernst and Malhoit, 2001). Despite these reservations, last year the State Board of Education adopted a policy that students who fail End of Grade examinations even after repeated attempts accompanied by remedial help may not be promoted without a well-grounded and well-documented exception granted by their principals. The promotion standards take effect for fifth graders this spring, and for students in grades three and eight over the next few years. So evidence about their effects is not yet available.

Meanwhile, the best evidence concerning the effects of such "no social promotion" policies come from Chicago. Early research on the Chicago policy indicates that most students made impressive standardized test score gains (Roderick et al., 2000). On average, 6th and 8th grade students gained almost two grade levels more than would have been expected without the policy in place. Students with the lowest prior scores made the largest measured gains.

With the positive findings came two troubling notes: third graders' learning gains actually declined after the policy was implemented, and students who were retained were not helped by a second pass through the grade they failed. Why the difference between the effects on third graders and the effects on older children? Some observers say that students in the 6th and 8th grades were not working particularly hard before the policy was adopted. The policy pushed both teachers and students to bear down. But 3rd graders were already working reasonably hard at mastering material that was new to them. The policy simply made them more anxious, which was counterproductive.

The results for retained students are less puzzling. They received only modest assistance during the year of retention. Yet these were students with whom neither intensive assistance during the year before retention nor a strong summer program had made much headway (see below). Only careful diagnosis and more targeted and powerful interventions are likely to help these children — far more than simply recycling them through the same grade again.

Thus, school and student accountability systems show promise for reducing the black-white achievement gap and have begun to deliver on some of their promise. But the jury is still out on just how effective they will prove to be and whether their benefits will be accompanied by some of the worrisome effects seen in Chicago. Only if they are accompanied by strong and sustained interventions to support students at risk of failure will their promise be realized and their negative effects minimized.

North Carolina's promotion standards do provide for a "personal education plan" for retained students, but it is not yet clear how vigorous the support for retained students will actually be. Decades of research on policy implementation (McLaughlin, 1990) suggests that the implementation of personal education plans will vary sharply from district to district, school to school, and even from student to student. Districts that want to minimize the negative effects of retention may wish to specify and monitor an approach to supporting retained students rather than leaving it to each school to develop and implement personal assistance plans on their own.

SUPPORT STUDENTS WITH INDIVIDUAL TUTORING, MORE COMPREHENSIVE REFORMS, SUMMER PROGRAMS, AND FOLLOW-UP ASSISTANCE.

As advocates for at-risk students have argued forcefully, it is unreasonable to expect and demand success without providing at-risk students with effective assistance to meet the expectations and standards (North Carolina Justice and Community Development Center, 2001). Research provides some guidance about what to do — and what not to do — for students at risk for retention. First, what not to do. A 1997 evaluation of Title I, the largest federal program for disadvantaged students, indicated that many common ways of using Title I funds are ineffective, including the use of classroom aides, small reductions in class size, and "pull-out" small group remediation (Puma et al., 1997).

In contrast, individual tutoring does appear to be effective. Research on tutoring specifies characteristics of both effective tutoring practice and effective tutors (Slavin and Madden, 1989; Wasik and Slavin, 1993; Ross et al., 1995). Effective tutoring is done one-on-one, supplements rather than supplants normal classroom instruction, and focuses on the regular curriculum. Programs that

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spell out what the tutor should do are more effective than programs that leave the approach to the discretion of each individual tutor. In most effective programs, tutors model or demonstrate the skills to be cultivated, then coach the student through the process, gradually reducing this "scaffolding" as the student grows more proficient.

Not surprisingly, the most effective tutors are certified teachers. What may surprise some, however, is that tutoring of younger students by older ones ("cross-age tutoring") seems to have the next largest net effect on student learning — larger than tutoring by aides or volunteers. In part, this may be because the student tutors themselves learn through the process along with the students they are helping. Paraprofessionals or aides have generally not been found to be effective tutors, but there is some evidence that if the aides are selected specifically for their good reading and writing skills and are given proper training, they can be effective (Farkas, 1998a; Farkas 1998b).

Though tutoring clearly can help, even advocates of tutoring concede that it is often not sufficient to close achievement gaps. They argue for "comprehensive school reform." The proposition that coordinated whole-school change is necessary to improve outcomes for disadvantaged students was first put forward in the 1997 evaluation of Title I mentioned earlier (Puma et al., 1997; Fashola and Slavin, 1998). Researchers propose that thoroughgoing changes in curriculum, instruction, classroom management, and assessment for all students, supported by sound professional development and broadened participation in school governance, would represent a more effective route to better outcomes. There is considerable evidence to support the proposition that whole school reforms are more successful than reforms that target individual elements within a school (Puma et al., 1997; Fullan, 1991; Protheroe and Perkins-Gough, 1998; Herman and Stringfield, 1997; Doherty, 2000). The strength of research support for specific comprehensive school reform models varies greatly. Yet there is sufficient support for some models to warrant careful consideration by schools and districts searching for ways to close achievement gaps.

Even comprehensive efforts to support success during the school year may not be enough. Mandatory summer programs for students at risk can substantially reduce retentions (Roderick et al., 1999; Roderick et al., 2000). The six to seven week Chicago program is taught by qualified teachers, features small classes (sixteen students or fewer), focuses squarely on the required reading and mathematics curricula, and allows for individual attention (one or more tutors per class). As a result of the program, retentions have been cut significantly.

DESEGREGATE SCHOOLS AND PROGRAMS WITHIN SCHOOLS.

Until recently, one might have assumed that desegregation is a step that has already been taken. Some would also argue that the results did not justify the extraordinary social and political dislocations that accompanied it. Yet there is strong evidence that segregation is neither a thing of the past nor merely a superficial matter of who sits next to whom. North Carolina's schools are resegregating at a rapid pace. North Carolina now has 220 schools with minority enrollments of 80 percent or more — double the number of such schools in 1993 (Simmons and Ebbs, 2001). In substantially desegregated North Carolina schools, just over half of African-American students (51.1%) score at or above grade level on state tests. In segregated schools, the figure is 7.5 percentage points lower (43.6%) (Simmons and Ebbs, 2001). Middle class black students suffer the greatest damage from segregation, scoring significantly worse in segregated schools than in an integrated setting (Simmons and Ebbs, 2001).

Just how desegregation matters is complex. There is clear evidence that schools with a substantial white presence get more resources of the sort that matter to student achievement, such as good teachers and access to instructional materials (Grissmer et al., 2000). Predominantly black schools have much higher percentages of uncertified and inexperienced teachers than do predominantly white or integrated schools.

If desegregation makes such a difference in student learning, why has research using large national data bases generally found the effects to be so modest? One reason may be the patterns of resegregation within nominally desegregated schools. Research has found that the percentage of black students in Academically and Intellectually Gifted programs, Honors, Advanced Placement, and International Baccalaureate programs and courses is generally substantially lower than the percentage of black students in the schools (Darity, Castellino, and Tyson, 2001). So "desegregated" schools often harbor resegregation within the school, which masks the contribution of desegregation to improved student learning.

In sum, separate is not equal, either in terms of student learning or in terms of the resources devoted to African-American students in segregated schools. Desegregation of schools and within schools helps equalize opportunities to learn, expectations, discipline, key resources, and student achievement.

Conclusion

The black-white test score gap narrowed rapidly from the late sixties until the early eighties (Hedges & Nowell in Jencks & Phillips, 1999). In fact, if the progress of that period had continued at the same rate, by now there would be no gap at all. Unfortunately, the upward trend lines leveled off in the early eighties. Yet the rapid progress that was made confirms that the gap is neither an immutable fact of nature nor of intractable socioeconomic patterns. Research shows that the ten steps suggested here could close it sharply. None of them is both easy and inexpensive. In the process of trying to carry them out, several states and districts have encountered unexpected pitfalls. Yet it is clearly possible to take these steps, and they do yield results. States, districts, and schools that want to close the gap can do it.

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A fuller version of this report, complete with footnotes, a bibliography, and an appendix on Comprehensive School Reform models, is available from the Research Council and at www.firstinamerica.northcarolina.edu.

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